Government of Western Australia
Department of Water and Environmental Regulation

Amendment Notice 1

Licence Number	L8435/2010/3
Licence Holder	GSM Mining Company Pty Ltd
ACN	165 235 030
File Number:	2011/000299
Premises	Granny Smith Gold Mine Mining Tenements M38/18, M38/161, M38/162, M38/167, M38/191, M38/205, M38/287, M38/380, M38/389, M39/397, M38/440, M38/532, M38/525, M38/690, M38/691, M38/692, M38/725, L38/50, L38/51, L38/79, L38/80, L38/87, L38/96, L38/106, L38/144, L38/145, L38/144, L38/146 and L38/209 LAVERTON WA 6440
Date of Amendment	**31/01/2018**

Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Date signed: 31 January 2018

Alana Kidd

Manager Licensing (Resource Industries)

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Definitions and interpretation

Definitions

In this Amendment Notice, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Amendment Notice	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 33 Cloisters Square PERTH WA 6850 info@dwer.wa.gov.au
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DMIRS	Department of Mines Industry Regulation and Safety
DWER	Department of Water and Environmental Regulation
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this Review
Freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
GSM	GSM Mining Company Pty Ltd
kL	kilolitre
Licence Holder	GSM Mining Company Pty Ltd
m^3	cubic metres
mbgl	metres below ground level
mg/L	milligram per litre
mRL	metres Reduced Level
m/s	metres per second

Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
Mtpa	million tonnes per annum
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report.
Risk Event	as described in *Guidance Statement: Risk Assessment*
RIWI Act	*Rights in Water and Irrigation Act 1914*
RTSF	Reclaimed Tailings Storage Facility
Specified Ecosystem	As defined in DWER's *Guidance Statement: Environmental Siting,* November 2016
TDS	Total Dissolved Solids
TSF	Tailings Storage Facility
UDR	*Environmental Protection (Unauthorised Discharges) Regulations 2004* (WA)
WRD	Waste Rock Dump

Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the Licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to amendments for Category 5. No changes to the aspects of the existing Licence relating to Categories 6, 33, 52, 54, 64 or 73 have been requested by the Licence Holder.

The following guidance statements have informed the decision made on this amendment:

- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessment (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

Licence

GSM Mining Company Pty Ltd (GSM) currently owns the Granny Smith mine site which is a gold mining and processing operation located in the north-eastern Goldfields region of Western Australia, approximately 24 km south of Laverton.

Mining commenced at the site in 1989, with ore extracted from a number of deposits which are no longer active. Mining of the Wallaby open pit ceased in 2006. The Wallaby underground pit is currently the only active mining project at the site.

Ore is processed at the processing plant by using carbon-in-pulp and carbon-in-leach processes. Tailings are discharged to the Granny Smith Tailings Storage Facility (TSF). The locations of the Wallaby underground mine, the TSF and the ore process plant are shown in Figures 1 and 6 below.

On 03/09/2015, GSM's two licenced premises (L8435/2010/3 - Granny Smith Site and L7454/2000/9 - Wallaby Project) were merged into one prescribed premises by redescribing the premises boundary area of L8435/2010/3 - Granny Smith Gold Mine. L7454/2000/9 was revoked.

The existing licence L8435/2010/3 categories and approved capacities are listed in Table 2 below.

Table 2: Licence categories

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
5	Processing or beneficiation of metallic or non-metallic ore	50,000 tonnes or more per year	4,500,000 tonnes per annual period
6	Mine dewatering	50,000 tonnes or more per year	10,219,614 kL per annual period
33	Chemical blending or mixing	500 tonnes or more per year	4 000 tonnes per year
52	Electric power generation	10 MW or more in aggregate (using a fuel other than natural gas) 20 MW or more in aggregate (using natural gas)	25 MW diesel 24MW using LNG
54	Sewage facility	100 m^3 or more per day	360 m^3 per day
64	Class II or III putrescible landfill	20 tonnes or more per year	9,500 tonnes per year
73	Bulk storage of chemicals, etc	1,000 m^3 in aggregate	3,004 m^3

Table 3 provides the instrument history for L8435/2010/3.

Table 3: Instrument history

Instrument	Issued	Description
L7454/200/2 to L7454/2000/9	From 27/09/2000	L7454/20090/9 merged with L8435/2010/3 in 2010 and L7454/20090/9 revoked.
Instrument	**Issued**	**Description**
L5108/1988/8	06/10/2003	Licence re-issue
L5108/1988/9	06/10/2004	Licence re-issue
W4395/2007/1	19/03/2008	TSF cell 2 raise from RL443m to RL450m
W4588/2009/1	17/12/2009	TSF cell 3 raise from RL424m to RL426.5m
L8435/2010/1	01/04/2010	New licence to replace L5108/1988/9 which ceased due to non-payment of annual fees.
W4788/2010/1	23/12/2010	TSF cell 1 raise by 2.5m to RL445.5m
W4903/2011/1	11/08/2011	TSF cell 2 raise by 2.5m to RL448.5m
L8435/2010/2	01/10/2010	Licence re-issue
W5165/2012/1	07/06/2012	For dewatering from Granny Smith pit, Goanna pit and Windich pit into Lake Carey.
W5268/2012/1	18/01/2013	New waste water treatment plant
W5398/2013/1	27/06/2013	TSF cell 3 raise to 429.0 mRL
L8435/2010/3	03/10/2013	Licence re-issue
L8435/2010/3	19/03/2015	Licence amendment to new format and to include new discharge points for TSF seepage water
L8435/2010/3	03/09/2015	Licence amended to assess new LNG power station and to merge Licence with L7454/2000/9 Wallaby Project (now revoked).
L8435/2010/3	07/01/2016	Licence amendment to assess TSF Cell 1 lift and update groundwater monitoring bores.
L8435/2010/3	29/04/2016	Notice of Amendment of Licence Expiry Dates. New expiry date 6/10/2034
L8435/2010/3	31/01/2018	Amendment Notice 1 for construction of a paste plant, TSF cell 3 raise to RL 432.2 m, and amend the TSF groundwater monitoring regime.

Amendment description

GSM submitted an application on 28 August 2017 to amend the existing licence to include a paste plant operation and to change the TSF groundwater monitoring regime. A further amendment application was submitted on 10 October 2017 for construction of TSF Cell 3 raise (Stage 3E). Both applications have been combined into this Amendment Notice.

Wallaby Paste plant

GSM propose to construct a paste plant at the Wallaby project area. The paste plant will combine reclaimed tailings, water and binder (Portland cement) to produce a hardening paste which will be used as backfill in the Wallaby underground mining operation.

Tailings will initially be sourced from the Granny Smith TSF Cell 2 in order to increase the cell's life. Reclaimed tailings will be hauled 13 km to the Wallaby project area to a Reclaimed Tailings Storage Facility (RTSF) and stockpiled for drying prior to processing in the pastefill plant. The pastefill plant is located within the RTSF. The locations of the Granny Smith TSF, the haul road and the proposed paste plant are shown in Figures 1 and 2 below.

The Paste Plant has a design capacity of 300 tonnes per hour. Actual production forecast for the 2019-2027 period is for a total of 2.78 Mm^3 of tailings to be borrowed from TSF Cell 2. With a specific gravity of approximately 1.5, this equates to a total of 4.2 Mt of tailings. As paste will be utilised on a campaign basis, peak paste production is expected to be 700, 000 tonnes per annum (with an average of 420,000 tonnes per annum).

There is no change to the category 5 current licence approved production capacity of 4.5 million tonnes per annual period (Mtpa).

Pastefill production

Paste is produced by the following general process line as illustrated in Figure 3 flow diagram below:

1. Binder (cement) is stored in a silo; reclaimed tailings are stockpiled for drying.
2. Dried and screened tailings are fed into the paste plant by a loader.
3. Tailings are conveyed to the plant's mixer and dosed with binder and water for paste production.
4. Paste is discharged for injection into the Wallaby underground pit.

RTSF infrastructure

The paste plant and storage of reclaimed tailings and other input materials will be located wholly within the RTSF. A maximum of 101,000 tonnes of tailings will be stockpiled in the RTSF at any one time.

The location of the past plant and general layout of the RTSF is shown below in Figures 2 and 4.

The tailings storage area of the RTSF is unlined. The base was assessed by Knight Piesold Pty Ltd (KP) by 13 excavated test pits. Three falling head permeability tests were undertaken by an external laboratory and reported hydraulic conductivities ranging between 1.7×10^{-7} and 8.4×10^{-7} m/s (Application (b)). GSM propose that the RTSF base will be constructed to a designed permeability of 1.7×10^{-7} m/s (Application (c)).

The paste plant will be constructed on a concrete base and bunded as shown in Figure 5. Paste will be discharged from the paste plant directly to the underground paste reticulation system.

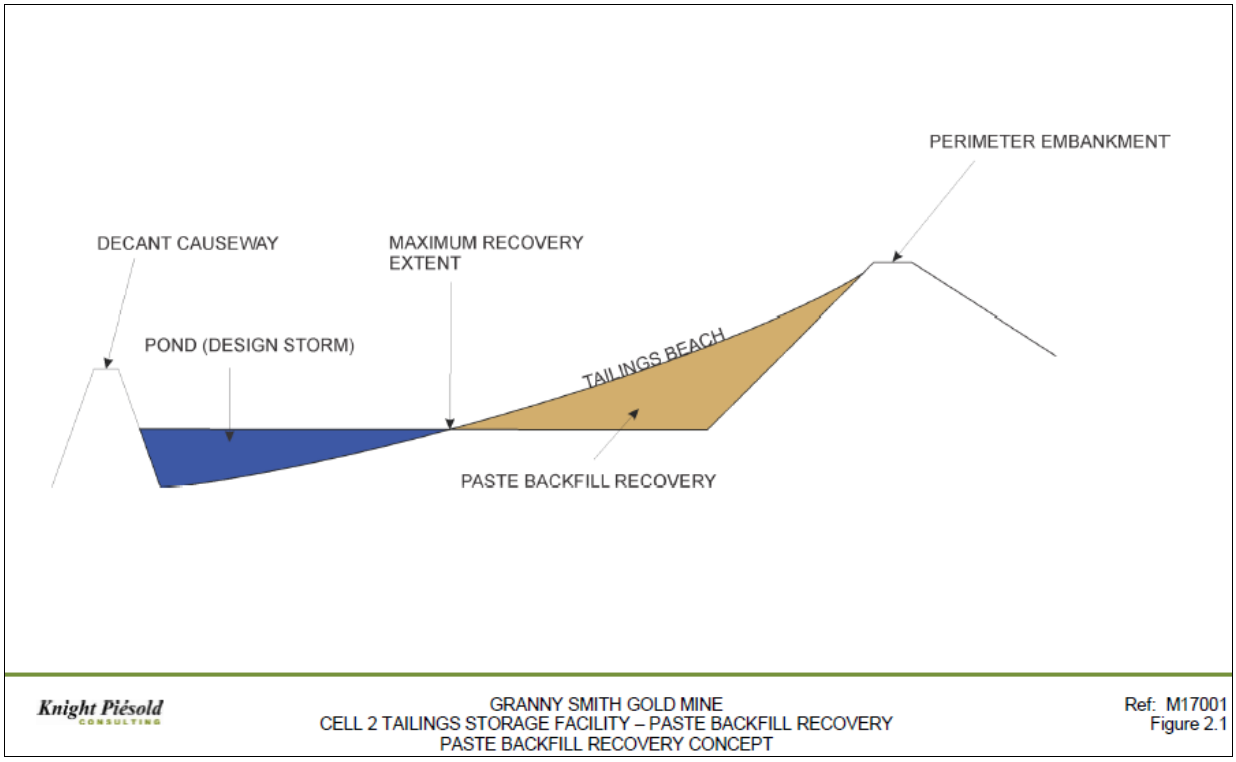
The entire perimeter of the RTSF will be enclosed by a 1.5 m bund to contain stormwater runoff. Runoff and stormwater will flow to a 7,000 m^3 Runoff Pond. With a 500 mm freeboard, the pond has been sized to contain a 1 in 100 year 72 hour rainfall event. Water will be pumped to the paste plant for re-use.

Tailings reclamation from Granny Smith TSF Cell 2

The Granny Smith TSF is comprised of three cells (Cell1, Cell 2 and Cell 3).

Tailings material will initially be reclaimed from Cell 2. The Cell 2 tailings beach will be developed to form a flat or slightly sloping plateau, with a central basin to store rainfall runoff to reduce the risk of the pond extending to the perimeter embankments during extreme rainfall events. The perimeter embankment slopes will extend down at a 1V in 2H slope to maintain stability.

Tailings recovery will not exceed a defined extent in order to maintain sufficient storage capacity for rainwater runoff, as conceptualised below.



During modelling, KP adopted a 1 in 500 year recurrence interval, 72 hour rain event. Rainfall depth was estimated at 262 mm. KP estimated a design storm runoff volume of 214,000 m^3 extending to an elevation of 445.8 m. To reduce the risk of water against the outer embankment, the recovery plan has been designed such that excavations in the outer zone are limited to the design storm inundation. The inner borrow area will be developed first, to increase the storm storage capacity and reduce the risk of the pond encroaching on the embankment during significant rainfall events.

TSF Cell 3 raise

The layout and location of the Granny Smith TSF is shown in Figure 6 below. Cell 1 and Cell 2 were commissioned during the late 1980s and early 1990s. Cell 3 was commissioned in 2002.

All three cells are equipped with central pump-out decant which returns supernatant water to the plant process pond.

A final elevation of RL 437 m has been approved by Notice of Intent No. 3761 under the *Mining Act 1978*. Cell 3 was raised to RL 429 m in 2013. Cell 3 comprises a starter embankment and upstream raises, which are constructed of mine waste and local borrow materials.

The proposed works to Cell 3 (named ‘Stage 3E’ in the Application documents) will raise the

existing Cell 3 perimeter embankment crests by 3.2 m from 429.0 mRL to 432.2 mRL, generating an estimated storage capacity of 4.1 Mt. The general arrangement of the Cell 3 raise is shown in Figure 7 below.

The embankments will have:

- A 6 m wide crest (with a 2% grade towards the inside crest).
- A 1V in 3.75H downstream face slope.
- An upstream slope of 1V to 2H.

The proposed embankment extension fill will be constructed of low permeability compacted tailings from the TSF (Zone A1) and starter embankments from low permeability oxidised waste sourced from Child Harold waste dump (Zone A2).

Cell 3's basin liner will be extended along the northwest margin of the facility and constructed on low permeability oxidised waste sourced from Child Harold waste dump (Zone G).

Zone A1 embankment extension fill material will:

- be free of visible organic and deleterious material;
- not exceed 100 mm in particle size;
- have a plasticity index not less than 8 %;
- compaction specification of 98% Standard Maximum Dry Density (SMDD); and
- moisture content of -2% < Optimum Moisture Content > +2% (OMC).

Zone A2 starter embankment fill and Zone G basin liner fill material will:

- be free of visible organic and deleterious material;
- not exceed 100 mm in particle size;
- have a plasticity index not less than 8 %;
- compaction specification of 98% Standard Maximum Dry Density (SMDD); and
- moisture content of -1% < Optimum Moisture Content > +3% (OMC).

In-situ and laboratory testing will be carried out during embankment construction to ensure that moisture-density and compaction requirements are met, and certified as compliant to relevant Australian Standards by a qualified engineer.

The decant and northern embankment drain tower will be raised and tailings pipework reinstated. Deposition of tailings will be sub-aerially from the embankments to locate the supernatant pond at the centre of the cell. The tailings distribution pipeline will run along the entire perimeter of the cell.

Supernatant pond markers will be installed.

TSF groundwater monitoring

Background - seepage and mounding

Indications of seepage to the underlying groundwater environment and mounding were observed shortly after the TSF was commissioned. Current groundwater monitoring at the TSF focuses on monitoring the seepage and mounding.

Groundwater in the vicinity of the TSF is naturally brackish to saline. However seepage from the TSF has increased the salt content and concentrations of dissolved metals in the local aquifer and mounding has impacted native vegetation in the vicinity of the TSF.

The greatest rise in water table is interpreted as occurring at the toe of TSF Cell 3 and directly south and southwest. To manage the risk of vegetation health associated with the mounding, a number of Groundwater Management Zones (GMZ) have been identified for targeted groundwater level reductions. The locations of the GMZ are shown in Figure 6 below.

- Zone 1 - Implementation of a seepage interception trench has lowered the water table with noticeable regeneration in this area.
- Zone 2 - monitoring indicates this area is unlikely a major seepage flow path, however mounding of the superficial water table is present.
- Zone 3 - Groundwater table is near ground surface and vegetation is at risk of inundation.

GSM implements a *TSF Groundwater and Seepage Management Plan* (GSMP) with the aim of lowering groundwater table elevations to baseline levels and below local rooting zone depths. The GSMP includes a number of management and mitigation measures including:

- Continued seepage recovery from a Seepage Interception Trench and sump established in 2012 (Figure 6).
- Turkeys nest at the Southwest corner of TSF Cell 3 deepened to enable collection of superficial seepage water (Figure 6).
- Continued management of TSF shallow drains to control superficial groundwater mounding around each cell.
- Tailing seepage re-used at the process plant, or discharged to the abandoned Goanna and Granny Smith open pits to enable greater control of TSF trench water balance.
- Reduction of decant water on TSF cells to less than 15%. (Recent studies indicate the supernatant pond size is a key contributor to recharge, seepage rates and local mounded water tables).
- Preference for two to three month deposition cycles for individual TSF cells to reduce the overall surface area of supernatant ponds. (Historical groundwater level data report a decrease or plateau in groundwater levels down stream of Cell 3 during periods of tailings deposition in Cell 1 and Cell 2).
- Monitoring of the groundwater table in order to identify patterns and trends and evaluate success of seepage recovery systems.

A bedrock fracture zone in an area at MB50 was found to report high yields of water. A seepage recovery system has recently been installed in this zone to abstract water and promote a zone of groundwater level drawdown. Recovery Bores PB5 and PB3A are located as shown in Figure 6 below. Abstracted water is pumped to the Seepage Interception Trench.

During 2016, the cumulative volume of seepage discharged from TSF Trench 1 was 306,806 kilolitre (kL) to Goanna Pit and 200,355 kL reused in the Process Plant (from the AER for the 2016 Annual Period).

<u>TSF groundwater monitoring</u>

The *Groundwater and Seepage Management Plan* includes a groundwater monitoring program. AECOM (2017) conducted a review of the monitoring program and made the following recommendations:

- Refine and reduce the southern TSF monitoring in relation to ongoing Seepage Interception Trench abstraction. The system has been in place for 2 years, and reduction in monitoring commitments would not compromise the ability to assess on going impacts.
- Increase the monitoring in the west of Cell 3 (with newly installed monitoring bores and

seepage recovery bores PB3A and PB5) to provide understanding of the success of local seepage recovery and lowering groundwater mounding.

- Several bores no longer exist, are damaged or provide limited useful data and can be removed from the monitoring regime.

GSM have submitted the revised TSF groundwater monitoring (prepared by AECOM, 2017) and requested the revisions be included in the licence amendment. The revised monitoring program has a stated focus on monitoring major seepage paths, aquifer units, and groundwater abstraction associated with seepage mitigations, and with preference to monitoring sites with long term and high resolution datasets.

A number of bores in the revised program have been changed from quarterly to annual water level and quality sampling. Bores PB3A and PB5 have been added to the program. Bores MB22S, MB22D, MB26S, MB55D, PB1 and PB3 are removed.

Figure 1: Location of Granny Smith TSF and the pastefill plant

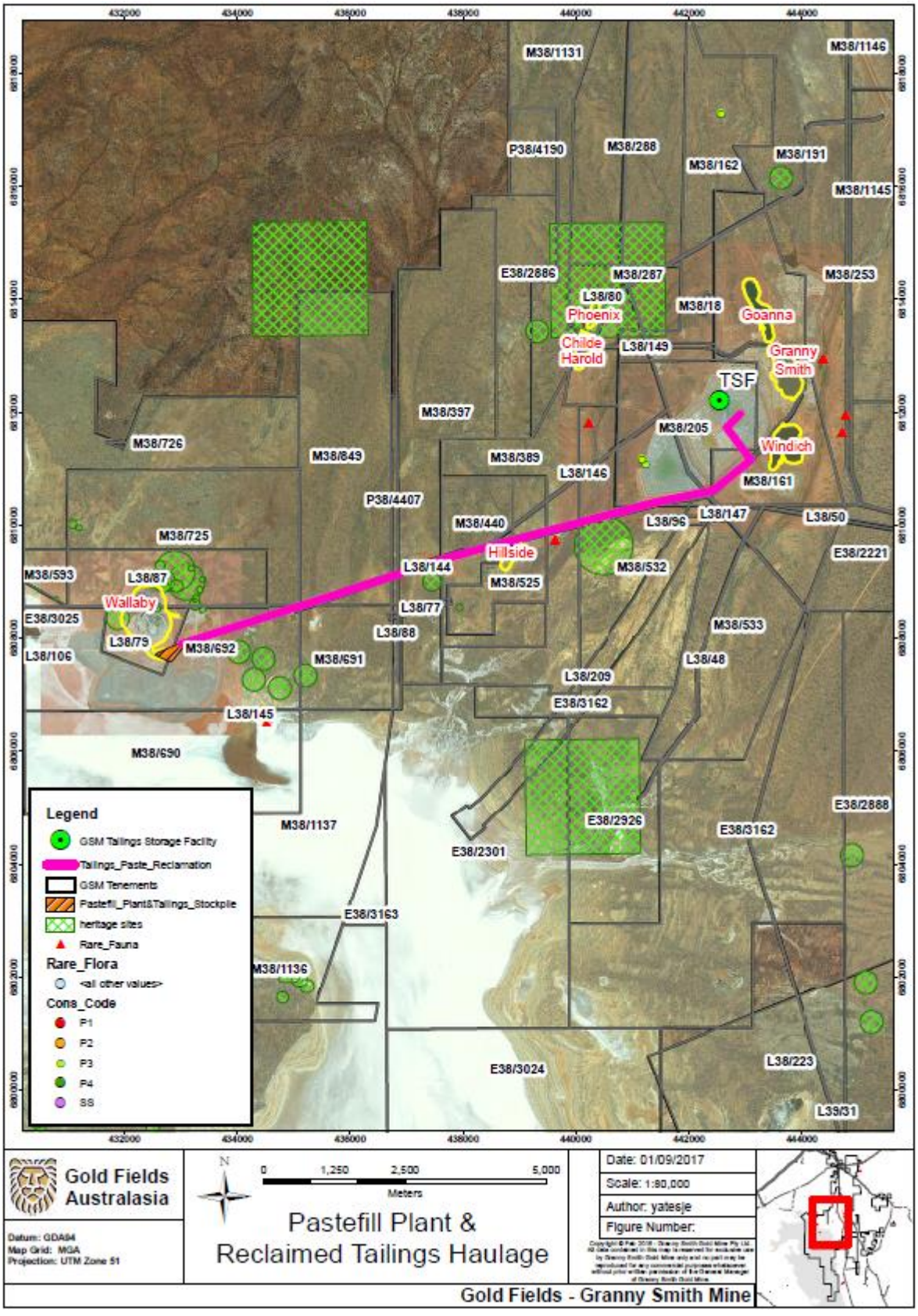


Figure 2: Location of the Pastefill plant

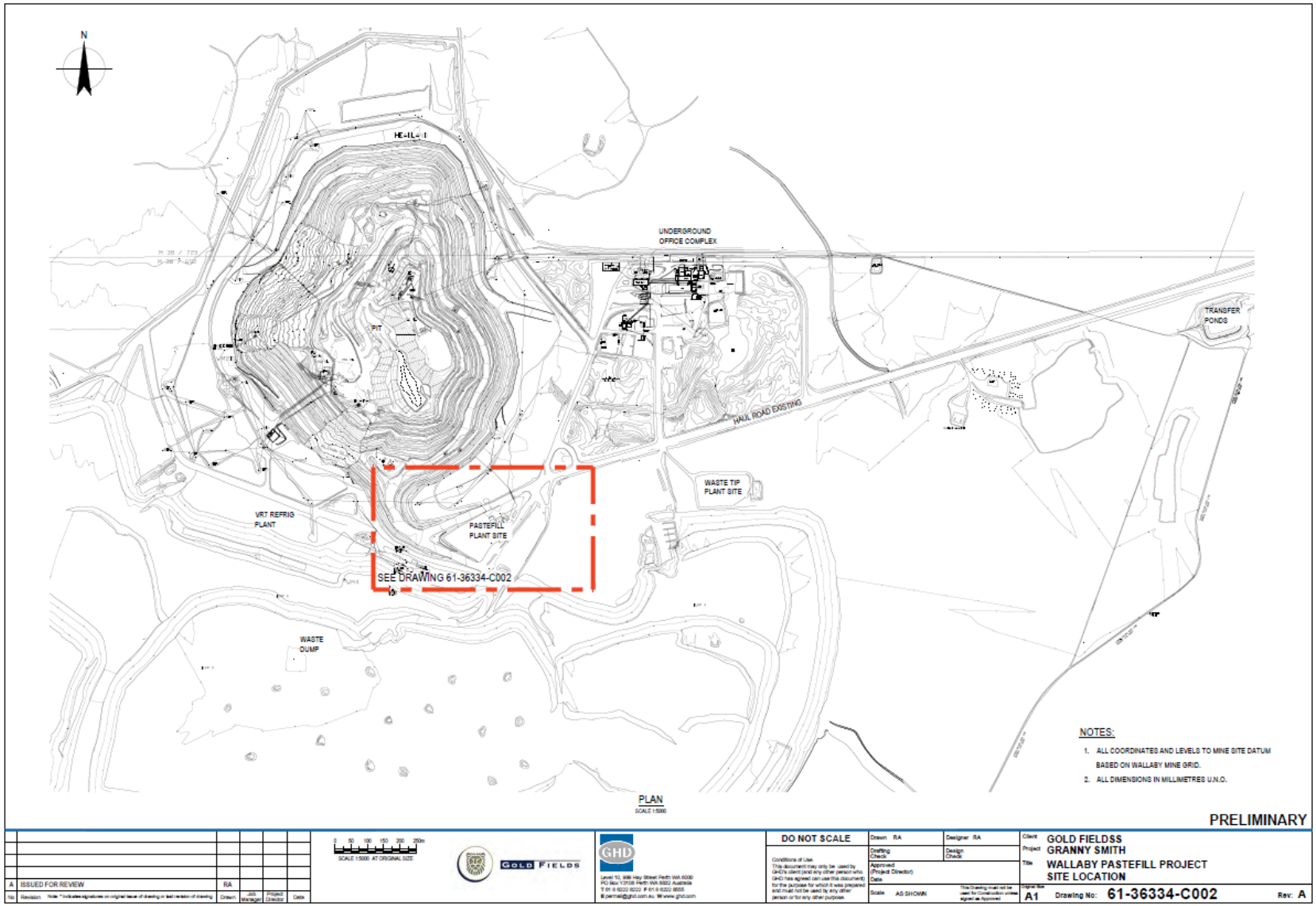


Figure 3: Paste plant flow diagram

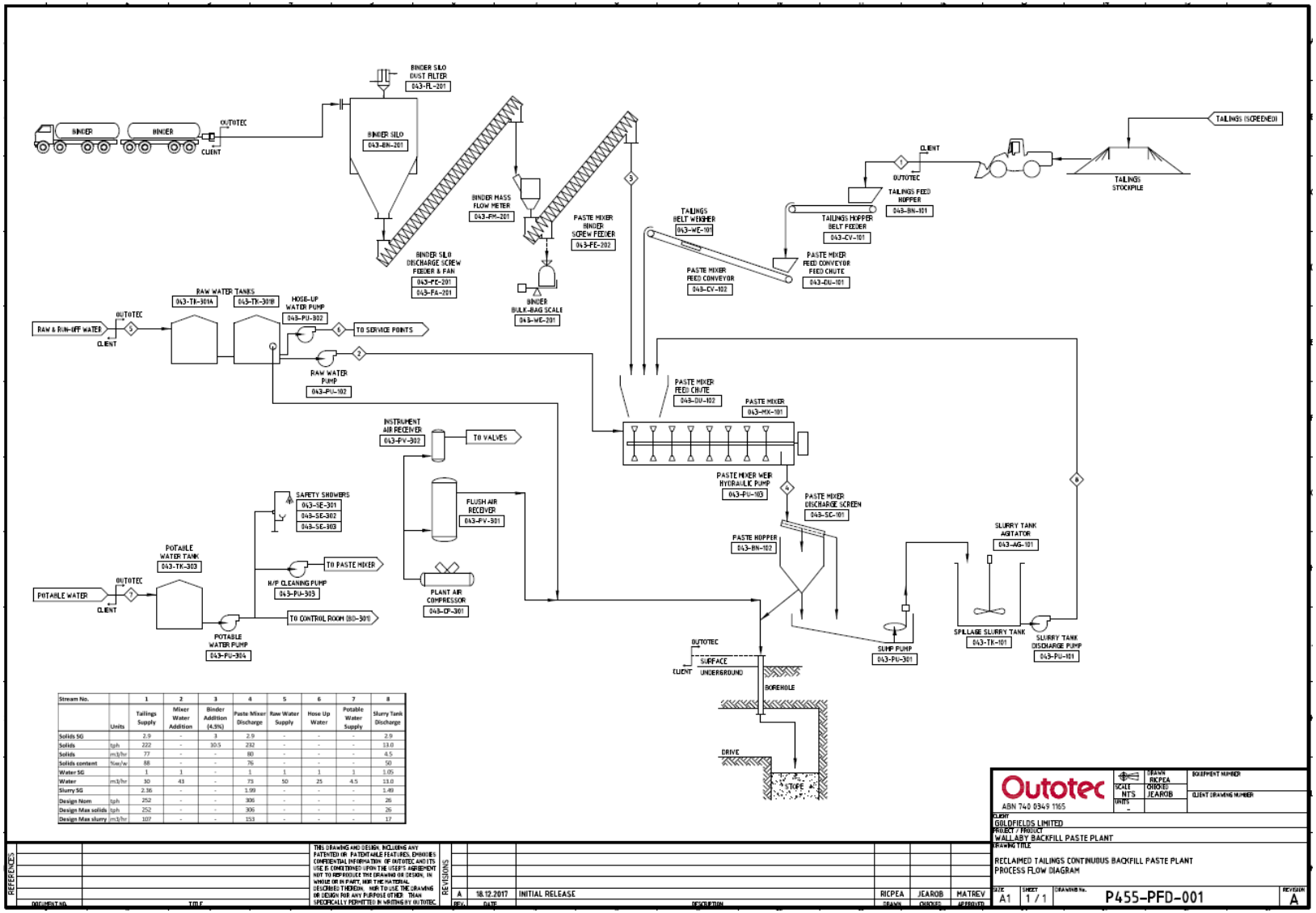


Figure 4: RTSF general arrangement

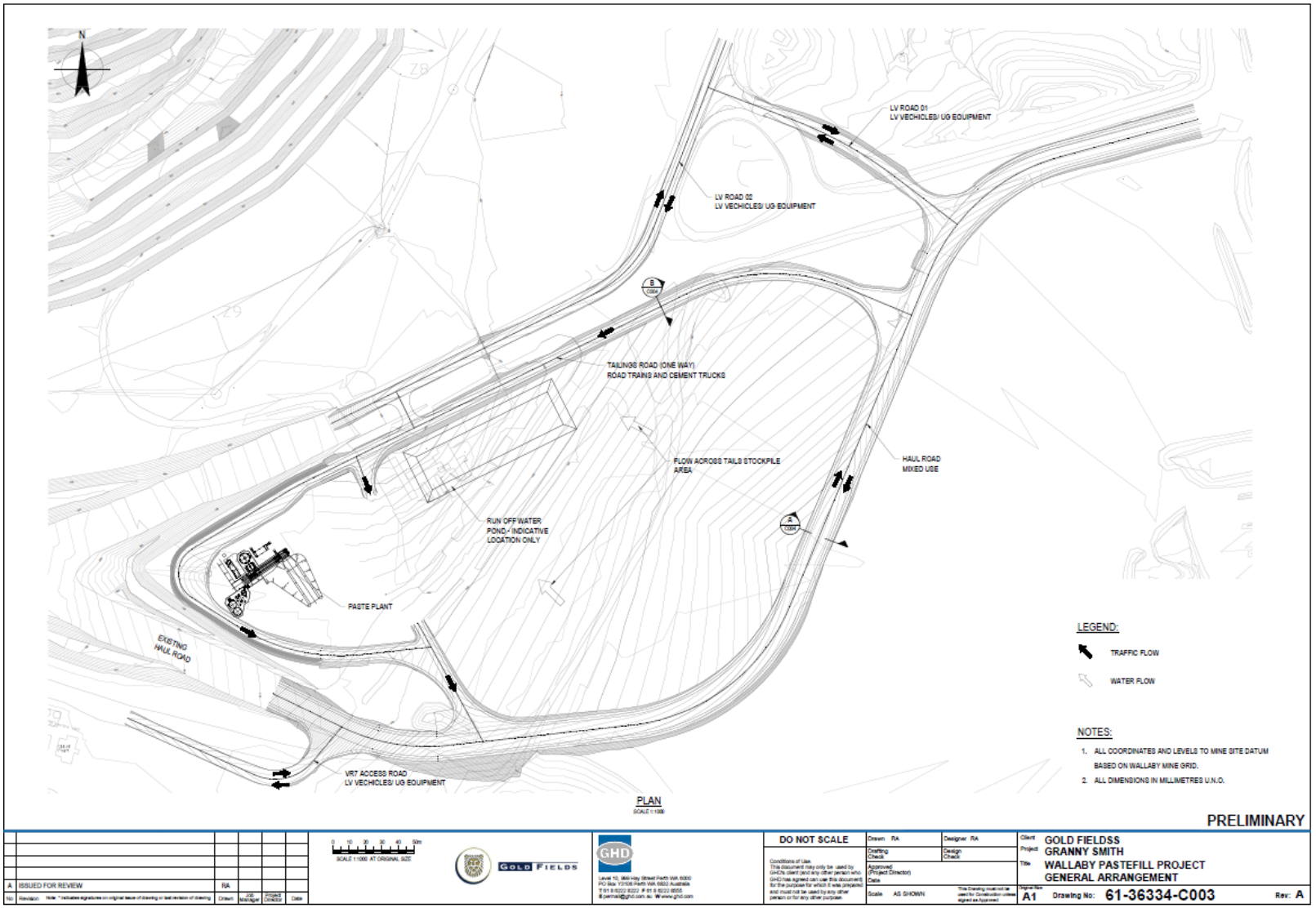


Figure 5: Paste plant bunding and general layout

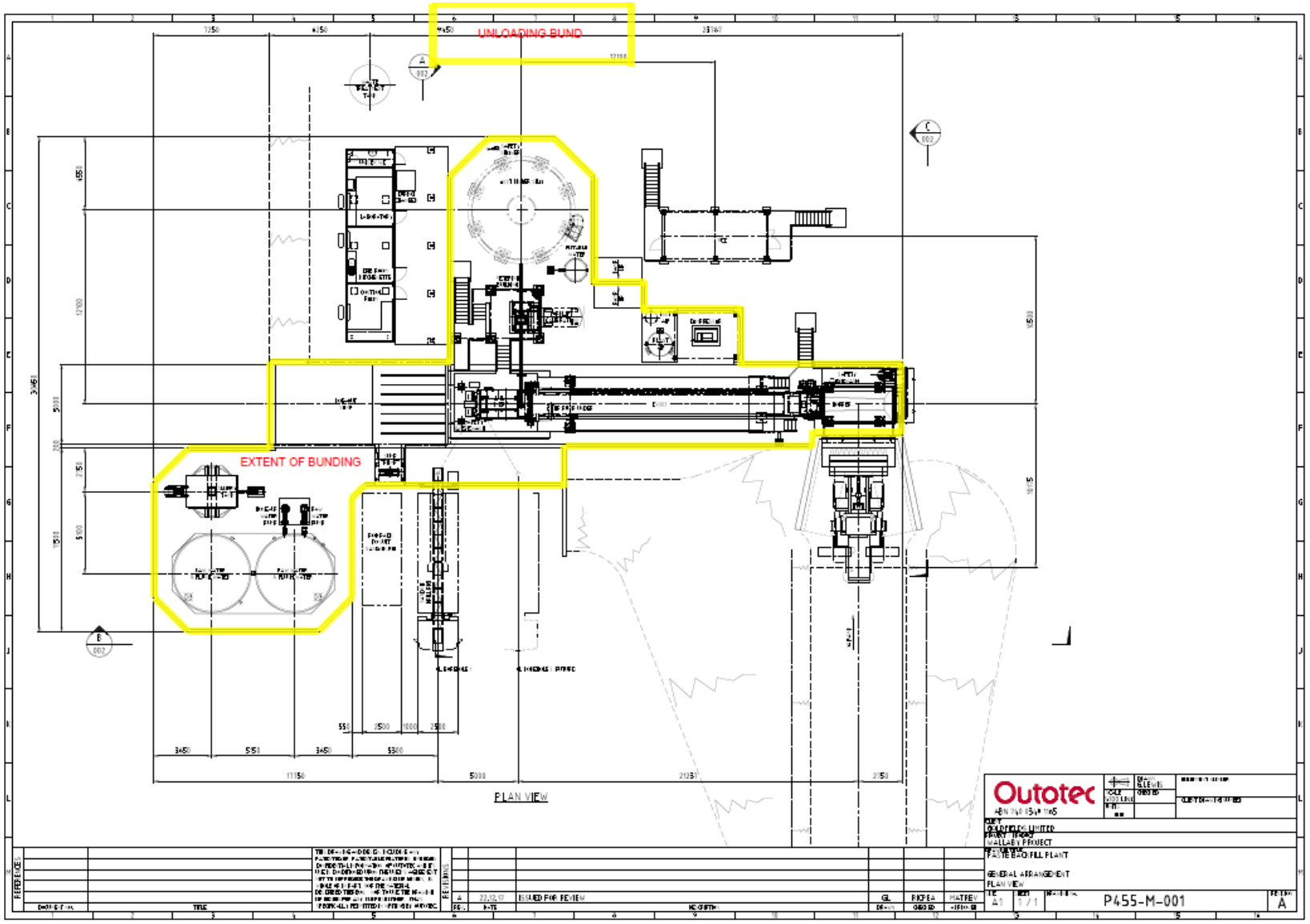


Figure 6: Granny Smith TSF cells and groundwater monitoring

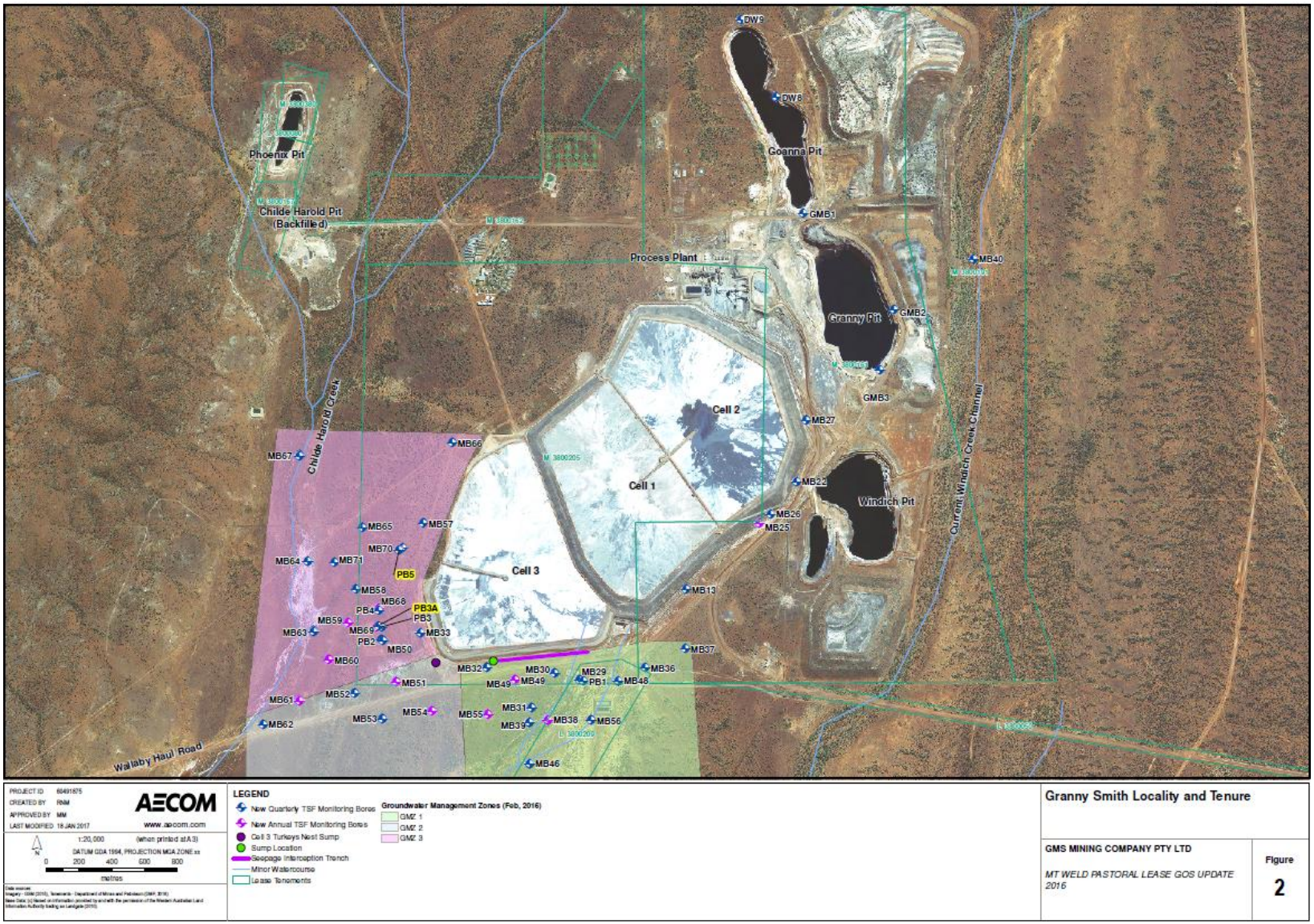
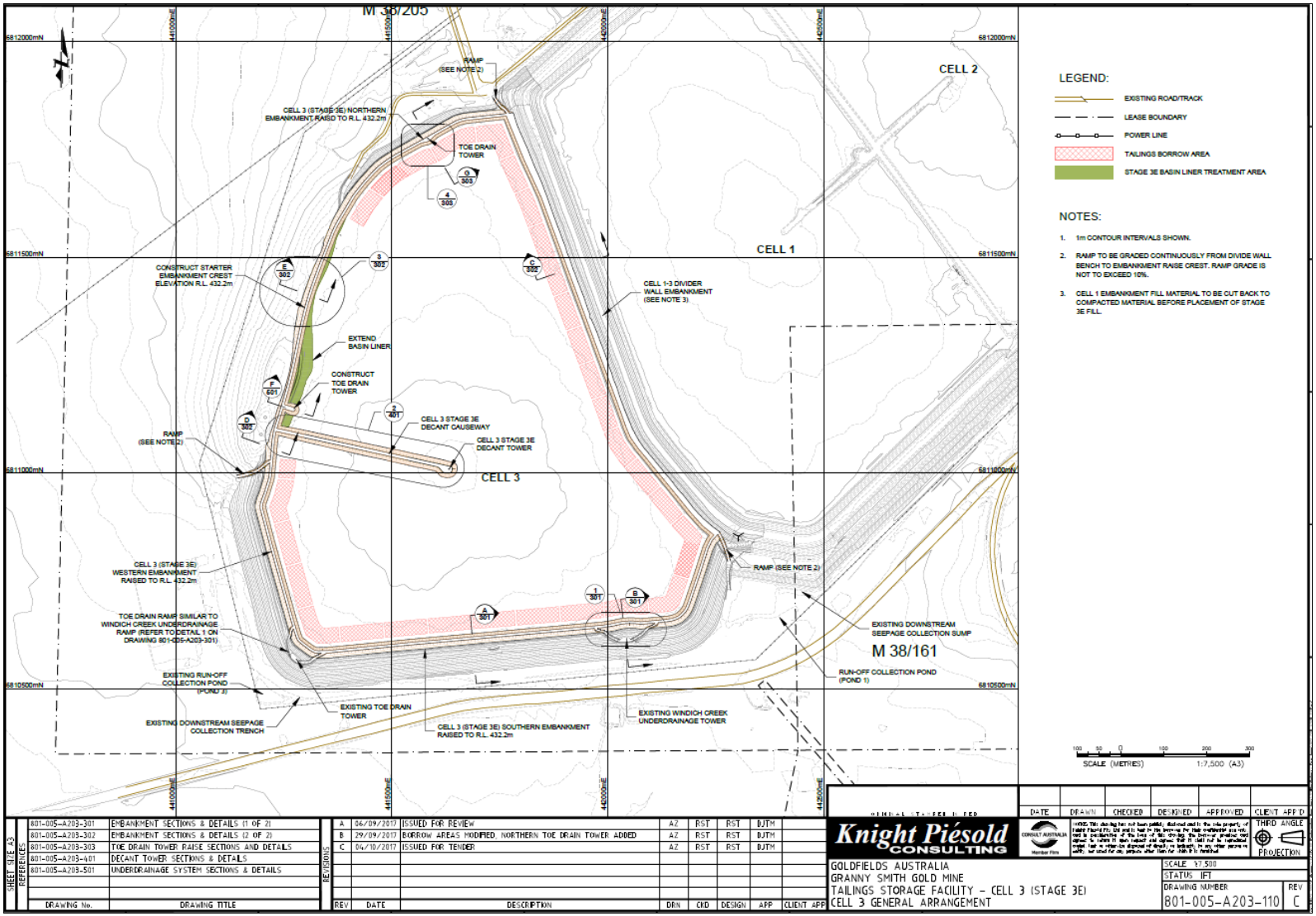


Figure 7: TSF Cell 3 - raise - general arrangement



Other approvals

Other approvals that are applicable to the proposed amendments include those listed in Table 4 below:

Table 4: Other approvals

Legislation	Number	Approval
Part IV of the EP Act	MS 551	MS 551 relates to the Wallaby open pit (not the Wallaby underground operations). The Wallaby open pit is closed.
Mining Act 1978 (WA)	NOI 3761 [2001]	For development of TSF and including constructing Cell 3. Approved 2001.
	Registration ID: 530037	Stage 3 Tailings Seepage Management Project and Discharge to Granny Smith and Goanna Open Pits Approved 27/02/2015
	Registration ID: 69515	Mining Proposal to commence tailings reclamation and pastefill activities and extend the core farm at the Wallaby Operation. Tenements M38/161, M38/205 and M38/692. Approved 04/12/2017
Rights in Water and Irrigation Act 1914 (WA) (RIWI Act)	GWL 65744(8)	Enables the abstraction of groundwater from the fractured rock aquifer, including by the Seepage Interception Trench, Cell 3 Turkey's Nest and the Seepage Recovery Borefield.
	GWL 100054 (7)	Enables abstraction of groundwater from the fractured rock aquifer in the vicinity of the Wallaby Open Pit/Underground Operations for dewatering and dust suppression.

Location and receptors

The premises is located in the north-eastern Goldfields region of Western Australia, approximately 23 km south of Laverton.

Table 5 lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 5: Receptors and distance from activity boundary

Residential and sensitive premises	Distance and location from Prescribed Premises
Mount Margaret (town)	12 km west
Laverton (town)	24 km north

Table 6 lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 6: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
Priority 3 Ecological Community (PEC) - Mt Jumbo Range vegetation complex	2.5 km (buffered) north of the paste plant location 6 km (buffered) west of the TSF

Priority 1 PEC - Mt Morgan calcrete groundwater assemblage type on Carey Palaeodrainage on Mount Weld Station. Unique assemblages of invertebrates have been identified in the groundwater calcretes.	8 km (buffered) northwest of the paste plant location 14 km (buffered) west of the TSF
Native vegetation - The dominant vegetation in the area is characterised by sparsely vegetated Mulga low woodland, Acacia burkittii shrub lands and open shrub lands	Vegetation remains in the immediate vicinity of the TSF. There is little remaining vegetation in the immediate vicinity of the RTSF.
P1 Public Drinking Water Source Area (PDWSA) - Laverton Water Reserve	Located 26 km north of the TSF.
RIWI Act Groundwater Area - Goldfields Groundwater Area	Underlies the premises and locality.
Lake Carey - a large temporary episodic playa lake - contains aquatic biota. Lake Carey forms a regional sink for surface water and groundwater. A shallow hypersaline water table (TDS 200,000 mg/L) lies below the surface of Lake Carey	The TSF is located approximately 8 km to the north of Lake Carey. The Wallaby mine and the RTSF is located immediately adjacent to Lake Carey.
Windich Creek (a redundant palaeochannel)	Crosses the south east corner of the TSF and eventually drains into Lake Carey.
Minor non perennial water courses on the premises	Direction of flow is south and southwest towards Lake Carey

Groundwater

Groundwater salinity mapping from DWER's GIS database indicates salinity in groundwater underlying the paste plant and south of the paste plant is hypersaline (TDS up to 280,000 mg/L). Salinity in the vicinity of the TSF is moderately saline to hypersaline. Groundwater at the premises is considered not suitable for agricultural or pastoral use. The closest stock watering bore is located 5 km away up-hydraulic gradient and is hosted within a superficial aquifer.

The regional flow direction of groundwater is towards Lake Carey with a drawdown cone extending north and south of the Wallaby Pit.

Soil

The area is characterised by internal drainage, extensive areas of elevated red desert sandplains with minimal dune development, salt lake systems that are associated with the occluded Palaeodrainage system, and broad plains of re-brown soils and breakaway complexes as well as red sandplains. Soils in the area of the paste plant are red earthy sands. Soils in the area of the TSF are shallow earthy loams, and shallow red earth.

Topography

Two NNE to SSW ridges approximately 20 m high are located north and east of the TSF. The ground generally falls gently to the south west.

Climate

The premises is located in a dry semi-arid region characterized by warm to hot summers and cool winters. High intensity storms bringing short duration, heavy rainfall to the area occur mainly in summer months.

Risk assessment

Table 7 below describes the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. The table identifies whether the emissions present a material risk to public health or the environment, requiring regulatory controls. Where the Applicant's controls lower the risk, they may be included in the Licence in accordance with *Guidance Statement: Risk Assessments.*

Table 7: Risk assessment for proposed amendments during construction and operation

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning for risk ratings
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
Category 5: Processing or beneficiation of metallic and non-metallic ore.	Construction of TSF Cell 3 raise and paste plant infrastructure Reclamation of tailings from the TSF for paste production. Transport of tailings by truck (13 km haul road). Storage and transfer of tailings within the RTSF. Handling of binder (concrete). Production of paste at the RTSF (paste processing	Tailings dust and dust from disturbed earth.	Priority 3 PEC 2.5 km north of the paste plant and 6 km west of the TSF. Mount Margaret 12 km west and Laverton 24 km north.	Air	Smothering of vegetation. Contamination of soil. Health and amenity impacts and contaminants in tailings and concrete dust.	**Minor** Low level off site impact	**Rare** The risk event may only occur in exceptional circumstances	**Low**	The Licence Holder has proposed, or implements the following controls to manage dust: Dust from vehicles, haul trucks, and loaders at the TSF, haul road and the RTSF will be managed by periodic watering by water cart. Dust generated by loading tailings into the Paste Plant hopper managed by limiting bucket height and load size in windy conditions, and if necessary, spray bars installed. Dust generated off the Paste Plant open conveyors managed by minimizing conveyor length appropriately and if necessary, spray bars wetting material at the hopper. GSM undertakes dust monitoring for the entire mine site (as a whole entity).

	plant). Storage of tailings in Cell TSF 3,								Given the separation distance from the nearest residence and sensitive environmental receptors, the risk of impact is considered to be **Low**. The general provisions of the EP Act will apply. No additional regulatory controls are deemed to be required.
		Noise	Mount Margaret 12 km west and Laverton 24 km north	Air	Health and amenity impacts	**Slight** Minimal impact to amenity	**Rare** The risk event may only occur in exceptional circumstances	**Low**	Given the separation distance from the nearest residence, the risk of impact is considered to be **Low**. The *Environmental Protection (Noise) Regulations 1997* apply. No additional regulatory controls are deemed to be required.
		Hydrocarbon spill from machinery and vehicles.	Land surrounding the construction areas at the TSF and RTSF. Lake Carey Groundwater	Direct discharge to land, surface water and infiltration to groundwater.	Contamination of soil. Adverse health effects to biota of Lake Carey.	**Minor** Low level on site impacts	**Rare** The risk event may only occur in exceptional circumstances	**Low**	Lake Carey is immediately adjacent to the proposed RTSF. Groundwater is hypersaline. The Licence Holder's controls include: • Spill equipment is maintained at the site. In the event of a spill the contaminated soil will be collected and disposed. • All hydrocarbon storage areas are compliant with the *Dangerous Goods Storage and Handling of Non-Explosives, Safety Regulations 2007*, and Australian Standards 1940-2004.

									The risk of impact is considered **Low**. The *Environmental Protection (Unauthorised Discharges) Regulations 2004* apply and no additional regulatory controls are deemed to be required.
	Construction of TSF Cell 3 raise and RTSF/paste plant infrastructure	Stormwater during heavy rainfall events carrying sediment laden water.	Vegetation in the path of the stormwater flow, and Lake Carey.	Land and water courses	Short term localized inundation and sedimentation, with adverse impacts to health and survival of native vegetation and Lake Carey biota.	**Minor** Minimal off site local impacts	**Rare** The risk event may only occur in exceptional circumstances	**Low**	Given the short term nature of construction and low average monthly rainfall in the area, the risk of impact is considered **Low**, and no additional regulatory requirements are deemed to be required.
	Reclamation of tailings from the TSF.	Tailings and liquor spill due to embankment failure.	Soil and vegetation in the path of flow.	Direct discharge to land and infiltration to groundwater.	Contamination of surrounding soils with metals and metalloids, sulfide minerals (if present), dissolved solids, cyanide and arsenic. Adverse impacts to the health and survival of native vegetation.	Not assessed	Not assessed	Not assessed	Structural stability of the TSF is assessed, regulated and managed under the *Mining Act 1978,* which is administered by DMIRS. No additional regulatory requirements are deemed to be required.
		Tailings overtopping due to changes to the beach profile.	Soil and vegetation adjacent to the TSF.	Direct discharge to land.	Contamination of surrounding soils with metals and metalloids,	**Moderate** Mid-level on-site impacts.	**Unlikely** The risk event will probably not occur in	**Medium**	Vegetation at risk of impact is native vegetation in the vicinity of the TSF. There are no 'Specified Ecosystems' within 6 km, and Lake Carey is 8 km

					sulfide minerals (if present), dissolved solids, cyanide and arsenic. Adverse health impacts on native vegetation.		most circumstances.		away. Licence Holder's controls: • The reclaim volumes of tailings from the TSF beach has been modelled with a minimum top of embankment total freeboard of 500 mm to contain a 1 in 500 year/72 hour storm event (rainfall depth 262 mm). • Freeboard inspected visually daily. • Embankment grade maintained at 1V:2H or less. Controls as conditioned in the existing licence remain appropriate. The limitation of the embankment grade will be added to the Licence, as management of the beach profile contributes to lowering risk.
	RTSF - storage of tailings and production of pastefill.	Stormwater runoff containing contaminants of fine tailings particles and cement.	Soil and vegetation in the flow path. Biota of Lake Carey.	Direct discharge to land and surface water.	Contamination of surrounding soils and Lake Carey with metals and metalloids, sulfide minerals (if present), dissolved solids, cyanide and arsenic. Adverse effects to health of Lake Carey biota and ecology.	**Moderate** Low level off-site impacts at a local scale**.**	**Unlikely** The risk event will probably not occur in most circumstances		Lake Carey is immediately adjacent to the RTSF. Licence Holder's controls: <u>Construction and operation</u> • A 1.5 m bund will enclose the entire perimeter of the RTSF. • Runoff water from tailings stockpiles and earthen based areas will be directed to a runoff water pond. • Runoff Pond sized to contain runoff generated by a 1-100 year 72 hour storm event with a 500 mm freeboard.

									• Runoff Pond freeboard inspected weekly. • Runoff water will be pumped to the process plant for re-use or water cart for dust suppression. • The Paste Plant and infrastructure will be constructed within the RTSF on a concrete base and bunded (Figure 5). • Spills within the paste process plant bunding will report to a bog-out sump (Fig 5) which will be pumped out for reuse in the paste process plant. Solids will be removed by loader. • Paste reticulation collars will be bunded and spills report to the bog-out sump. • Paste will be directly discharged from the process plant to the paste reticulation system by underground pipe. The Licence Holder's controls have contributed to lowering of risk and will be conditioned in the Licence.
		Seepage of tailings and binder leachate from the base of RTSF.	Ground below and adjacent to the RTSF and to groundwater.	Seepage to ground and infiltration to groundwater.	Contamination of ground and groundwater with metals and metalloids, sulfide minerals (if present), dissolved solids, cyanide	**Slight** Minimal on site local impacts.	**Unlikely** The risk event will probably not occur in most circumstances.	**Low**	• Lake Carey acts as a groundwater sink. Groundwater at the RTSF and underlying Lake Carey is hypersaline and not suitable for agricultural or pastoral use. Licence Holder's controls: <u>Construction</u> • The earthen base of the

					and arsenic.				RTSF will be compacted to a permeability of 1.7 x 10-7 m/s. • The Paste Processing Plant and binder storage will be constructed within the RTSF on a concrete base. The Licence Holder's controls have contributed to lowering of risk and will be conditioned in the Licence.
	TSF Cell 3 embankment raise.	Tailings and liquor spill due to embankment failure.	Native vegetation in the close vicinity. Mt Jumbo Range vegetation complex (Priority 3 PEC) 6 km away.	Direct discharge to land and infiltration.	Contamination of surrounding soils with metals and metalloids, sulfide minerals (if present), dissolved solids, cyanide and arsenic. Adverse impacts to the health and survival of native vegetation.	Not assessed	Not assessed	Not assessed	Structural stability of the TSF is assessed, regulated and managed under the *Mining Act 1978,* which is administered by DMIRS. No additional regulatory requirements are deemed to be required.
		Overtopping of TSF Cell 3 with tailings, decant water, or stormwater containing tailings after heavy rainfall.	Terrestrial ecosystems - surrounding soils and vegetation, and surface water bodies.	Direct discharge to land. Infiltration through ground.	Contamination of surrounding soils with metals and metalloids, sulfide minerals (if present), dissolved solids and cyanide affecting soil quality and	**Moderate** Mid-level on site impacts	**Unlikely** The risk event will probably not occur in most circumstances	**Medium**	Vegetation at risk of impact is native vegetation. There are no 'Specified Ecosystems' within 6 km, and Lake Carey is 8 km away. Applicant's controls: <u>Construction</u> • Raise of Cell 3 by 3.2 m to 432.2 mRL sized for storage of 4.1 Mt tailings with a 500 mm freeboard, able to accommodate a 1 in 100

					causing vegetation stress or death.				year 72 hour rainfall event. • Central decant structure raised, to enable removal of excess water via return pipes. • Tailings discharged by subaerial spigots around the entire embankment to promote drying of tailings. <u>Operation</u> • Minimum top of embankment freeboard of 300mm or a 1 in 100 year/72 hour storm event (whichever is greater) is maintained. • Daily inspection of freeboard. The Licence Holder's construction controls have contributed to lowering risk and are conditioned in the licence. The Licence Holder's operational controls are conditioned in the existing licence and remain appropriate.
		Tailings leachate seepage – from embankments and base of the TSF.	Terrestrial ecosystems - surrounding soils and vegetation. Groundwater.	Seepage to ground and infiltration to groundwater.	Contamination of ground and groundwater with metals and metalloids, sulfide minerals (if present), dissolved solids, cyanide and arsenic. Mounding –	**Moderate** Mid-level on site impacts	**Almost certain** The risk event will probably occur in most circumstances	**High**	Seepage and mounding is occurring. Increasing the stored mass will increase hydraulic pressure. Groundwater is saline to hypersaline and considered not suitable for agricultural or pastoral use. Native vegetation in the near vicinity of the TSF has been impacted by mounding (Figure 6).

					contamination and inundation of vegetation root zone, causing stress or death.				There are no 'Specified Ecosystems' within 6 km, and Lake Carey is 8 km away. Licence Holder's controls: <u>Raise of Cell 3</u> • Embankments, and drainage pipework, decant infrastructure and tailings distribution pipeline constructed and quality controlled as detailed in *Granny Smith Gold Mine Cell 3 Tailings Storage Facility Stage 3E Raise – Technical Specification,* Knight Pieosold Consulting, October 2017. • Central decant structure raised to enable removal of excess decant water via return pipe. • Installation of decant pond markers. • Tailings distribution pipeline will run along the entire cell perimeter, and will be deposited sub-aerially from the embankments to locate the supernatant pond in the centre of the cell. The Licence Holder's construction controls are considered as contributing to lowering risk and will be conditioned in the Licence. <u>Operation</u> The following controls are conditions of the existing licence and remain applicable. • Decant pond maintained to

									less than 15% of the surface of the TSF, inspected daily. • Seepage collection and recovery system installed and used to capture seepage. • Seepage returned to the TSF or reused in the process plant, or discharged to Granny Smith pit or Goanna pit (previously mined open pits) • Groundwater monitoring targeted to monitoring mounding and potential impacts. • Annual assessment of vegetation within the zone of influence of TSF3. • Annual water balance for the active TSF. In addition GSM: • Maintains the supernatant pond in the centre of the cell. This additional control contributes to lowering risk of seepage by maintaining the decant pond away from embankment walls, this control will therefore be added to the existing licence.

Decision

The Delegated Officer has determined that the construction and operation of the Paste Plant, and the construction and operation of the raise to TSF Cell 3 will not result in emissions which are unacceptable to public health or the environment.

Paste plant

The Delegated Officer has determined that the Licence Holder's controls for the construction and operation of the Paste Plant and tailings reclaim have lowered the risk of emissions and discharges, and they are conditioned in the Licence.

TSF Cell 3 raise

The Delegated Officer has determined that the Licence Holder's construction controls for the raise of Cell 3 have lowered the risk of emissions and discharges, and they are conditioned in the Licence.

The Delegated Officer has determined that conditions currently on the Licence remain appropriate for operation of the TSF Cell 3 upon completion of the raise.

TSF groundwater monitoring

DWER reviewed the revised TSF groundwater monitoring program prepared by AECOM (2017) and noted and concluded that:

1. Changes from quarterly monitoring to annual monitoring are appropriate given the water quality parameters and analytical results appear to be stable.
2. Groundwater has been recorded at 1 – 4 m below ground level in some areas.
3. Mounding of groundwater appears to be stable.
4. Sufficient monitoring bores are in place to monitor the groundwater mounding, therefore the removal of MB22, MB26, PB1 and PB3 from the monitoring regime will not impact the assessment and management of groundwater mounding at the TSF.
5. Sufficient water quality and water level data will be obtained for the system to identify trends.
6. Arsenic is not included as a monitoring parameter in the existing licence.

The Delegated Officer has determined that the monitoring regime be amended to reflect the proposal of AECOM (2017), and that arsenic is included as a parameter.

Definitions

Definitions have been updated.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 18 January 2018. Comments received from the Licence Holder have been considered by the Delegated Officer as shown in Appendix 2.

Amendment

1. Definitions in the Licence are amended by the deletion of the text shown in strikethrough below and the insertion of the bold text shown in underline below:

~~**'CEO'** for the purpose of correspondence means:~~
~~Chief Executive Officer~~
~~Department Administering the *Environmental Protection Act 1986*~~
~~Locked Bag 33~~
~~CLOISTERS SQUARE WA 6850~~
~~Email: info@der.wa.gov.au;~~

'CEO' for the purpose of correspondence means:

Director General
Department Administering the Environmental Protection Act 1986
Locked Bag 33 Cloisters Square
PERTH WA 6850
info@dwer.wa.gov.au

2. Definitions of the Licence is amended by the insertion of the bold text shown in underline below:

'AACR' means an Annual Audit Compliance Report in a format approved by the CEO as presented by the Licensee or as specified by the CEO (guidelines and templates may be available on the Department's website).

'mbgl' means metres below ground level;

'RTSF' means Reclaimed Tailings Storage Facility

'TSF' means Tailings Storage Facility

3. Condition 1.2.2 of the Licence is amended by the insertion of the bold text shown in underline below:

1.2.2 The Licensee shall ensure that tailings, decant water, dewatering water and effluent are only discharged, or discharged into containment, cells, dams or ponds with the relevant infrastructure requirements and at the locations specified in Table 1.2.1.

Table 1.2.1: Containment Infrastructure

Containment point reference	Material	Infrastructure requirements
TSF 1, 2 and 3	Tailings	Lined with in-situ clay to limit seepage to groundwater. **Embankment grade maintained at 1V:2H or less.**
RTSF	**Reclaimed tailings**	**1.5 m bunding of the entire perimeter.**
Process water pond	Return water	Lined with HDPE
Lagoons 1 and 2	Waste activated sludge; and Emergency treated wastewater	Compacted clay lined – waste activated sludge to be discharged into one lagoon at a time to allow drying before being appropriately disposed of by landfilling. Approval from CEO to be sought prior to use in

		emergency situations
Water transfer pond	Mine dewater	HDPE lined embankment foundations and base of water transfer pond are maintained. Embankment level of 4 metres above ground.

4. Condition 1.2.4 of the Licence is amended by the insertion of the bold text shown in underline below:

1.2.4 The Licensee shall manage TSFs such that:
(a) a seepage collection and recovery system is provided and used to capture seepage from the TSF;
(b) seepage is returned to the TSF or re-used in process; **and**
(c) **the decant pond is maintained in the centre of the TSF cell.**

5. Condition 1.2.5 of the Licence is amended by the insertion of the bold text shown in underline below:

1.2.5 The Licensee shall:
(a) undertake inspections as detailed in Table 1.2.2;
(b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and
(c) maintain a record of all inspections undertaken.

Table 1.2.2: Inspection of infrastructure		
Scope of inspection	**Type of inspection**	**Frequency of inspection**
Tailings pipelines	Visual integrity	Twice daily
Return water lines	Visual integrity	Twice daily
Water transfer pond	Visual integrity	Daily
Dewatering pipeline	Visual integrity	Daily
Embankment freeboard	Visual to confirm required freeboard capacity is available.	Daily
Decant pond	Visual to confirm the size is less than 15% of the surface of each TSF	Daily
Granny pit Goanna pit	Visual to confirm required freeboard capacity is available. Visual checks for avifauna deaths.	Daily
RTSF Runoff Pond	**Visual to confirm required freeboard capacity is available.**	**Weekly**

6. The Licence is amended by the insertion of the following Condition 1.2.15:

1.2.15 The Licensee shall ensure that the requirements as detailed in Table 1.2.7 are met during the construction of TSF Cell 3 (Stage 3E) raise.

Table 1.2.7: Construction requirements	
Infrastructure	**Requirements**
TSF Cell 3 raise	**Embankment crests raised to 432.2 mRL.** **Embankments shall have 6 m wide crest (with a 2% grade towards the inside crest), a 1V in 3.75H downstream face slope,**

	and an upstream slope of 1V to 2H.
Decant pump	**Raised to enable pump out decant water for effective management of the pond.**
Tailings pipework	**Tailings distribution pipeline to run along the entire perimeter of Cell 3.** **Constructed to enable deposition of tailings sub-aerially from the embankments to locate the supernatant pond at the centre of the the Cell.**
Supernatant pond markers	**Installed to enable measurement and management of supernatant pond size.**
TSF Cell 3 raise - embankments, decant infrastructure and toe drain sump towers and pipelines.	**Construction and quality control in accordance with the document *Granny Smith Gold Mine Cell 3 Tailings Storage Facility Stage 3E Raise – Technical Specification*, Prepared by Knight Pieosold Consulting, October 2017. (All, including Drawings and Appendices).**

7. The Licence is amended by the insertion of the following Condition 1.2.16:

1.2.16 The Licensee shall ensure that the requirements as detailed in Table 1.2.8 are met during the construction and operation of the Paste Plant and RTSF.

Table 1.2.8: Paste plant and RTSF construction and operation requirements	
Infrastructure	**Requirements**
RTSF	**Paste process plant, binder storage and reclaimed tailings located /stored only in the RTSF.** **The entire perimeter of the RTSF enclosed by a 1.5 m bund.** **Constructed so that run-off and storm water from earthen areas is directed to a Runoff Pond.** **Located as depicted in Schedule 1: Maps: Map of the RTSF.** **General layout as depicted in Schedule 1: Maps: Map of the RTSF: General arrangement.**
RTSF runoff pond	**Sized to contain run off generated by a 1-100 year 72 hour storm event with a 500 mm freeboard.** **Freeboard of 500 mm maintained.** **Water pump iinstalled to enable runoff and stormwater to report to the process plant for re-use, or pumped to a water cart for dust suppression.**
Paste Plant	**Constructed on a concrete base and bunded as depicted in Schedule 1: Maps: Map of paste plant – Map of the Paste Plant – layout and bunding.** **Spills within process plant bunding report to the bog-out sump and pumped out for reuse in the paste process plant. Solids removed by loader.**

	Paste discharged directly from the Paste Plant to the paste reticulation by underground pipeline. **Paste reticulation collars bunded and spills report to the Bog-out Sump.** **Bog- out Sump as depicted in Schedule 1: Maps: Map of the Paste Plant – layout and bunding.**

8. Condition 3.7.1 of the Licence is amended by the deletion of the of the text shown in strikethrough below and the insertion of the bold text shown in underline below:

3.7.1 The Licensee shall undertake the monitoring in Tables 3.7.1 and 3.7.2 according to the specifications in that table.

~~Table 3.7.1: Monitoring of ambient groundwater environmental quality~~				
~~Monitoring point reference and location~~	~~Parameter~~	**Units**	**Averaging period**	**Frequency**
~~TSF cell one: MB13~~ ~~TSF cell two: MB22, MB26 and MB27~~ ~~TSF cell three: MB29, MB30, MB31, MB32, MB33, MB36, MB37, MB39, MB40, MB46, MB48, MB50, MB52, MB53, MB53, MB56, MB57, MB58, MB62, MB63, MB64, MB65, MB66, MB67, PB1, PB2, PB3 and PB4~~	~~Standing water level~~	mbgl	Spot sample	Quarterly
	~~pH[1]~~	pH units		
	~~Electrical conductivity~~	µS/cm		
	~~Total dissolved solids~~	mg/L		
	~~Total cyanide[2]~~			
	~~Weak acid dissociable cyanide[2]~~			
	~~Chloride, sulphate, bicarbonate, nitrate~~			
	~~Calcium, magnesium, sodium, potassium, lead, zinc, iron, copper, aluminium, cadmium, cobalt, chromium, nickel,~~			
~~MB25 MB38, MB49, MB51, MB54, MB55, MB59, MB60, MB61, MB68 and MB69~~	~~Standing water level~~	mbgl	Spot sample	Annually
	~~pH[1]~~	pH units		
	~~Electrical conductivity~~	µS/cm		
	~~Total dissolved solids~~	mg/L		
	~~Total cyanide[2]~~			
	~~Weak acid dissociable cyanide[2]~~			
	~~Chloride, sulphate, bicarbonate, nitrate~~			
	~~Calcium, magnesium, sodium, potassium, lead, zinc, iron, copper, aluminium, cadmium, cobalt, chromium, nickel,~~			

~~Note 1: In-field non-NATA accredited analysis permitted.~~
~~Note 2: ISO-5667.3 2012 sampling methods permitted.~~

Table 3.7.1: Monitoring of ambient groundwater environmental quality				
Monitoring point reference and location	**Parameter**	**Units**	**Averaging period**	**Frequency**
TSF Cell 1: MB13 **TSF Cell 2: MB27**	**Standing water level**	**mbgl**	**Spot sample**	**Quarterly**

TSF Cell 3: **MB30, MB31, MB32, MB33, MB37, MB40, MB46, MB50, MB52, MB53, MB56, MB57, MB58, MB59, MB60, MB61,** **MB62, MB63, MB64, MB65, MB67, MB68, MB69,** **PB2, PB3A, PB4 and PB5.**				
TSF Cell 3: **MB25, MB29, MB36, MB38, MB39, MB48, MB49, MB51, MB54, MB55 and MB66,**	**Standing water level**	**mbgl**	**Spot sample**	**Annually**
TSF Cell 1: MB13 **TSF Cell 2: MB27** **TSF cell 3:** **MB30, MB31, MB32, MB33,** **MB40, MB46, MB50, MB52, MB56, MB58, MB62, MB63, MB64, MB65, MB67, PB3A, and PB5.**	**pH[1]**	**pH units**	**Spot sample**	**Quarterly**
	Electrical conductivity	**µS/cm**		
	Total dissolved solids	**mg/L**		
	Total cyanide[2]			
	Weak acid dissociable cyanide[2]			
	Chloride, sulphate, bicarbonate, nitrate			
	Calcium, magnesium, sodium, potassium, lead, zinc, iron, copper, aluminium, cadmium, cobalt, chromium, nickel and arsenic			
TSF cell 3: **MB29, MB36, MB37, MB48, MB53, MB54, MB57, MB66, MB68 and MB69.**	**pH[1]**	**pH units**	**Spot sample**	**Annually**
	Electrical conductivity	**µS/cm**		
	Total dissolved solids	**mg/L**		
	Total cyanide[2]			

	Weak acid dissociable cyanide[2]			
	Chloride, sulphate, bicarbonate, nitrate			
	Calcium, magnesium, sodium, potassium, lead, zinc, iron, copper, aluminium, cadmium, cobalt, chromium, nickel and arsenic			

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: ISO-5667.3 2012 sampling methods permitted.

9. The Licence is amended by the insertion of the following Condition 4.2.4:

4.2.4 The Licensee shall submit compliance documents to the CEO within 1 month following construction of the works listed in each of conditions 1.2.15 and 1.2.16.

10. The Licence is amended by the insertion of the following Condition 4.2.5:

4.2.5 The compliance documents shall:

(a) Certify that the works were constructed in accordance with the construction conditions of this Licence; and

(b) Be signed by a qualified engineer and a person authorized to represent the Licensee and contain the printed name and position of that person within the company.

11. The Licence is amended by removal map in Schedule 1: Map of monitoring locations defined in Table 3.8.1 and insertion of the map:

Map of monitoring locations. The locations of the monitoring points defined in Table 3.8.1 are shown below

12. The Licence is amended by insertion of following map in Schedule 1: Maps:

Map of the RTSF: Location

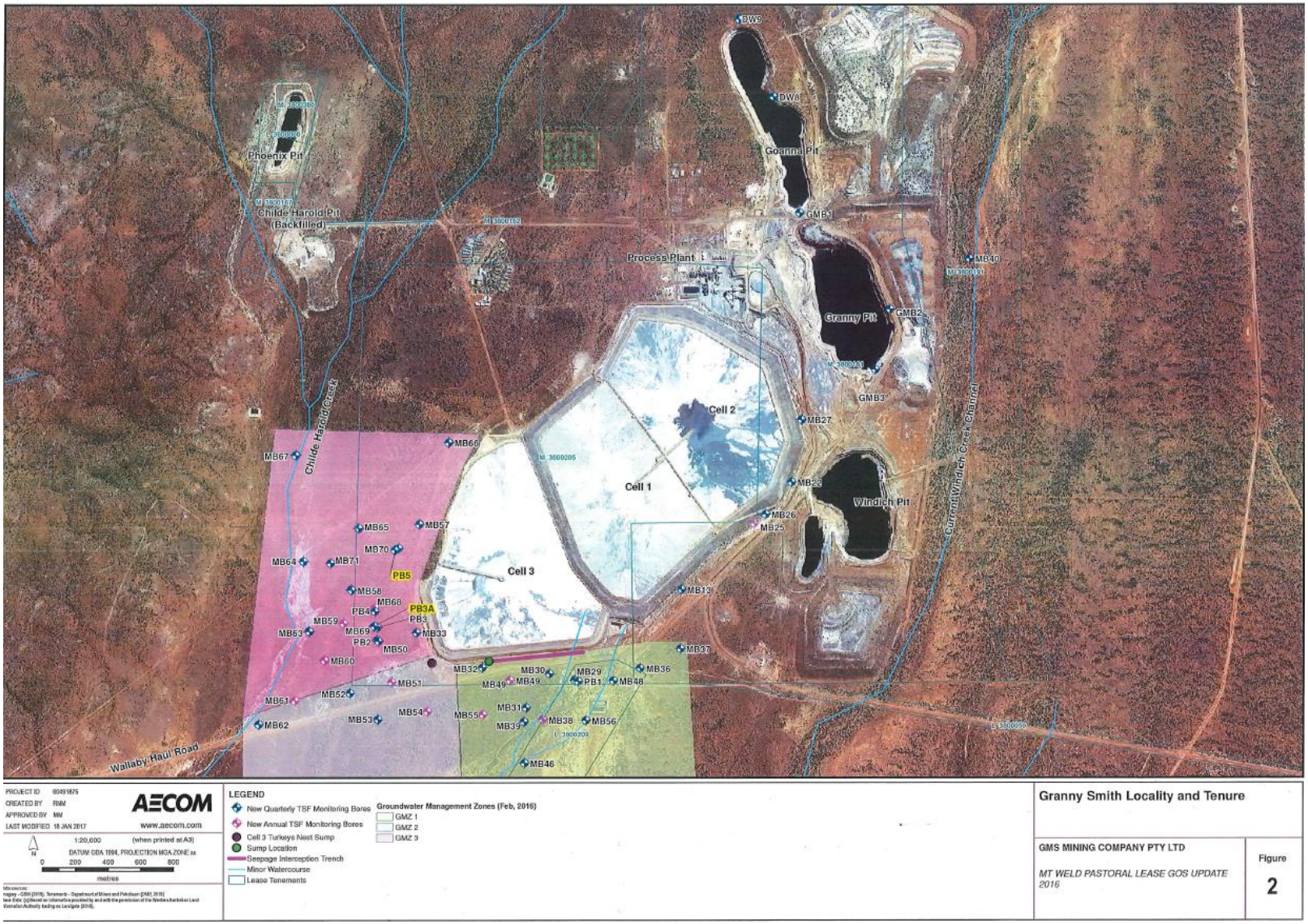
13. The Licence is amended by insertion of following map in Schedule 1: Maps:

Map of the RTSF: General arrangement.

14. The Licence is amended by insertion of following map in Schedule 1: Maps:

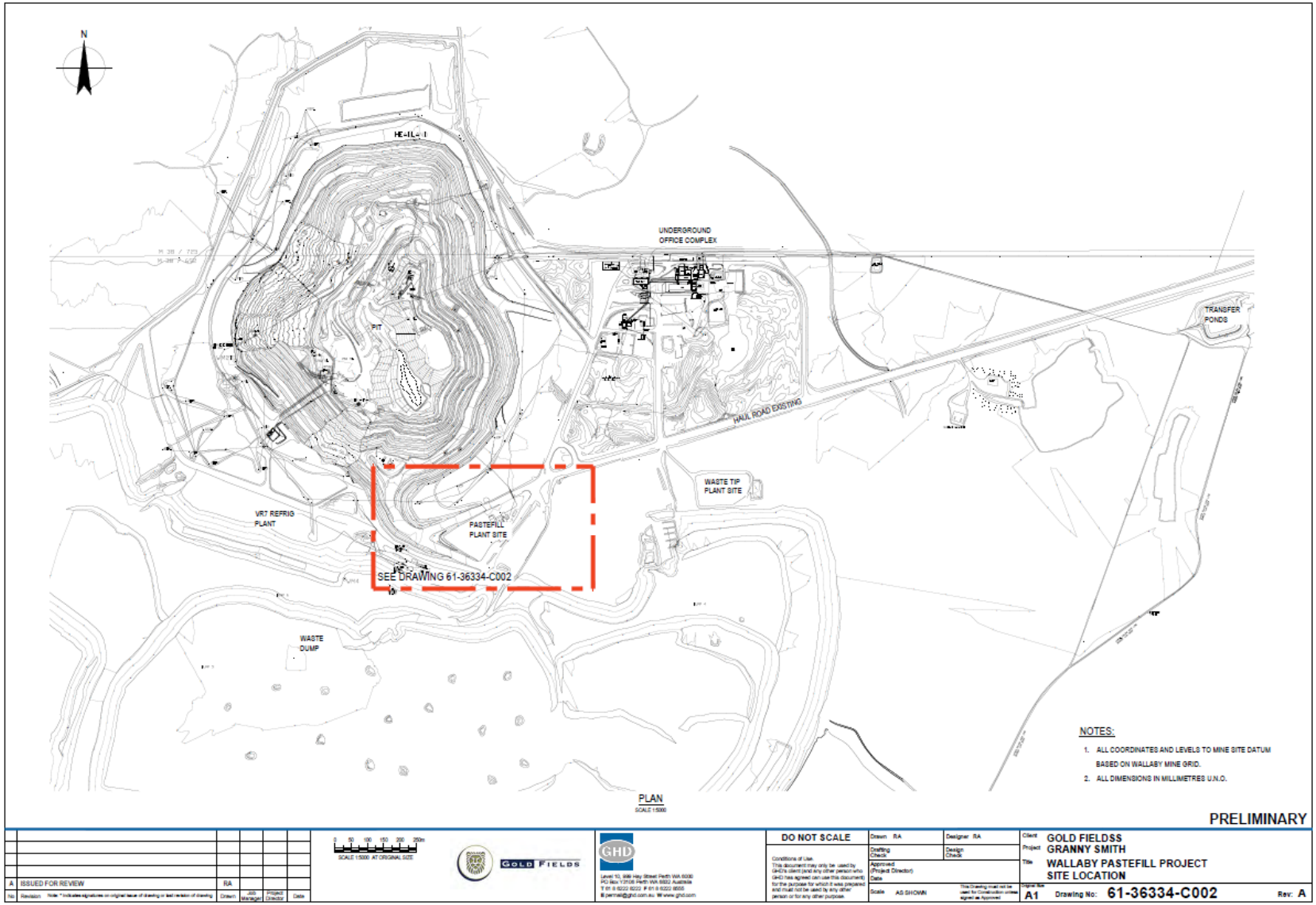
Map of the Paste Plant – layout and bunding.

Map of monitoring locations
The locations of the monitoring points defined in Table 3.8.1are shown below.



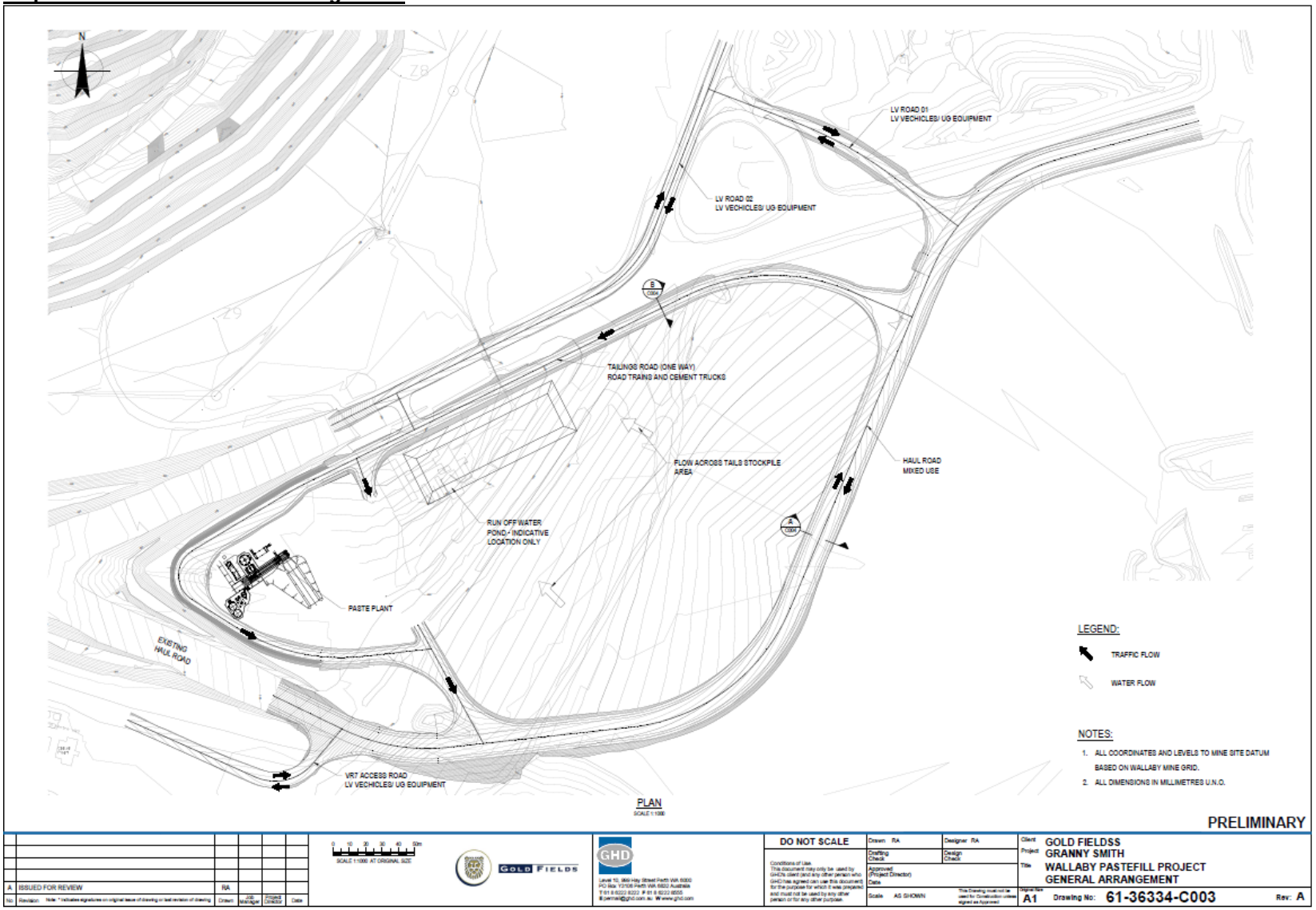
Licence: L8435/2010/3

Map of the RTSF: Location

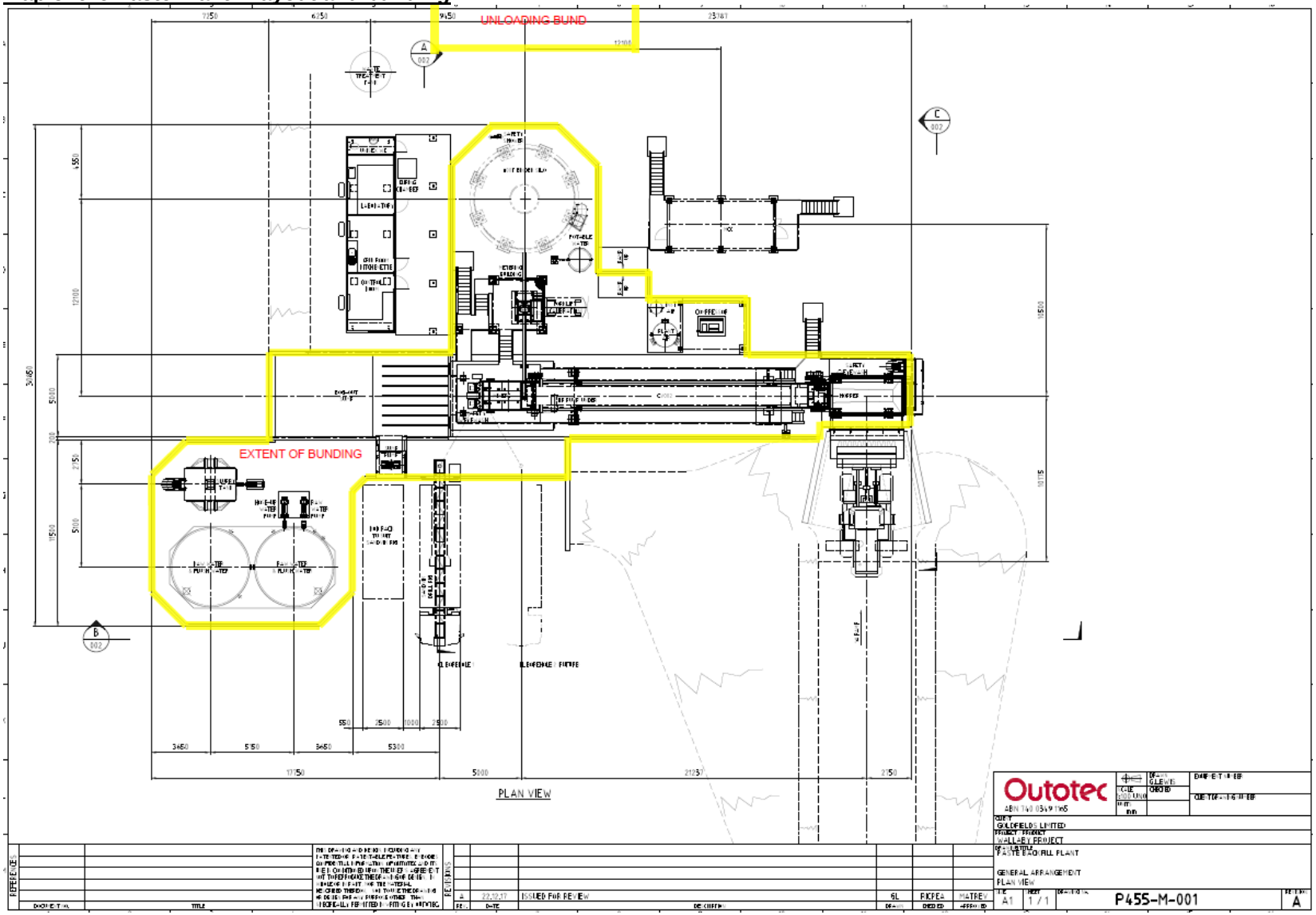


Licence: L8435/2010/3

Map of the RTSF: General arrangement



Map of the Paste Plant – layout and bunding



Appendix 1: Key documents

	Document title	In text ref	Availability
1	Application Letter: *RE: Supporting Documentation for Licence Amendment to L8435/2010/3 (Pastefill and TSF Monitoring Schedule Update)* with Attachment 1 (Application form), Attachment 2 (Prescribed Premises Maps) and Attachment 3A (Description of Activities). From Nicolle Britland, Goldfields, 23 August 2017	Application(a)	DWER Records (1509968)
2	Application Letter: *RE: Supporting Documentation for Licence Amendment to L8435/2010/3 (Pastefill and TSF Monitoring Schedule Update. Request for Further Information (11 September 2011)*, with Attachments 1 and 2. From Jeffrey Yates, Goldfields, 20/10/2017.	Application(b)	DWER Records (A1545287)
3	Application - Email: *Subject: RE: Response to RF_11 September – L8435 Licence Amendment – Pastefill and RTSF.* Sent from Jeffrey Yates, Goldfields, 8/11/2017 6:42 AM	Application(c)	DWER Records (1557738)
4	Application - Email: *Subject: RE: L8435/2010/3 Granny Smith Gold Mine Occupier's representative*, with Attachments. Sent from Nicolle Britland, Goldfields, 5/01/2018 2:54 PM	-	DWER Records (1587461)
5	Application - Email: *Subject: RE: Follow up on response to queries - amendment to L8435*. Sent from Nicolle Britland, Goldfields, 8/01/2018 5:35 PM	-	DWER Records (A1590260)
6	Application – *Letter Re: Supporting Documentation for Licence Amendment to L8435/2010/3 (TSF Cell 3 Lift - Category 5*, with Attachment 1 (Application form) and	Application (d)	DWER Records (A153911 & A1539116)

	Attachment 2 (supporting documentation). From Jeffrey Yates, Goldfields, 10 October 2017		
8	*Cell 3 Tailings Storage Facility Stage 3E Raise – Technical Specification*, Knight Piesold Consulting Pty Ltd, October 2017	KP, 2017a	DWER Records (A1539116)
9	*Cell 3 Tailings Storage Facility Stage 3E Raise – Licence Amendment*, Knight Piesold Consulting Pty Ltd, October 2017	KP, 2017b	DWER Records (A1539116)
9	*Guidance Statement: Environmental Siting.* Department of Environment Regulation, November 2016	-	accessed at www.dwer.wa.gov.au
10	*Guidance Statement: Setting conditions.* Department of Environment Regulation, October 2015.	-	
11	*Guidance Statement: Risk Assessment*. Department of Environment Regulation, February 2017	-	
12	*Guidance Statement: Decision Making*. Department of Environment Regulation, February 2017	-	
13	Licence L8435/2010/3 – Granny Smith Gold Mine (existing Licence)	L8435/2010/1	accessed at www.dwer.wa.gov.au
14	Ministerial Statement 551	MS 551	accessed at www.epa.wa.gov.au/
15	*TSF Groundwater and Seepage Management Plan,* AECOM Services Pty Ltd, 2 February 2017	AECOM, 2017	DWER Records (1546213)

Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Notice on 18 January 2018 for review and comment. The Licence Holder responded on 24 January 2018 waiving the remaining comment period. The following comments were received on the draft Amendment Notice.

Condition or section	Summary of Licence Holder comment	DWER response
Amendment description – Wallaby paste plant.	GSM calculates that peak paste production will be 700,000 tonnes per annum (tpa) not 78,000 tpa as stated in the draft of this section. GSM inserted by track changes the following information – "*Actual production forecast for the 2019-2027 period is for a total of 2.78 Mm^3 of tailings to be borrowed from TSF Cell 2. With a specific gravity of approximately 1.5, this equates to a total of 4.2 Mt of tailings. As paste will be utilised on a campaign basis, peak paste production is expected to be 700,000 tonnes per annum (with an average of 420,000 tonnes per annum."*	The Application form stated estimated pastefill production of 78,000 tpa, but paste production (and storage of tailings) will peak at 700,000 tpa with the proposed volume of tailings to be borrowed. Paste is produced on a campaign basis. The amount of tailings stockpiled at the RTSF at any one time remains the same (101,000 tonnes). Risk due to seepage and contaminated stormwater remains the same. The amendment changes as suggested by GSM are accepted and included in the Amendment. Conditions remain unchanged.
Amendment description - Tailings reclamation from Granny Smith TSF Cell 2	GSM inserted by track changes additional background information regarding excavation of tailings for tailings pond management.	The additional information has been included in the background section as useful information, but does not alter the applicant's controls in the assessment of risk of overtopping of the TSF. Conditions remain unchanged.
Condition 3.7.1	GSM corrections - bore PB3 removed and PB3A added.	Corrections accepted.